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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|------------------------------------|---------------------|------------------|
| 10/643,167 | 08/19/2003 | Martinus Hendricus Hendricus Hoeks | 081468-0305463 | 3594 |
| 909 | 7590 | 08/27/2004 | EXAMINER | |
| PILLSBURY WINTHROP, LLP | | | NGUYEN, HUNG | |
| P.O. BOX 10500 | | | ART UNIT | |
| MCLEAN, VA 22102 | | | PAPER NUMBER | |
| | | | 2851 | |

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,167

Applicant(s)

HOEKS ET AL.

Examiner

Hung Henry V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 13-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I (claims 1-12) in the reply filed on August 3, 2004 is acknowledged. The traversal is on the ground(s) that "the search and examination of the entire application can be conducted without serious burden". This is not found persuasive because while the invention I is explicitly related to an electrostatic chuck, the invention II is drawn to a lithographic exposure apparatus having "an illuminator"; "a support structure"; a "substrate table", "a projection system" and a chuck having "at least one electrode for applying a potential difference across the dielectric member of the chuck to generate a clamping force". There are different technical features between the group I and II. As such, the distinct and separate searches are quite extensive and place serious burden on the Examiner in regard to both examination and search. Furthermore, the instant restriction creates a burden or added expense to the Applicant is not germane to whether a restriction is proper. The issue here is whether the claims are independent and distinct, and the Examiner has demonstrated that they are.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamagawa et al (U.S.Pat. 5,777,838) in view of Logan et al (U.S.Pat. 6,754,062).

With respect to claims 1-12, Tamagawa et al (figure 1) discloses an electrostatic chuck for attracting an object (W) comprising: a dielectric member (12), the side of the dielectric member facing the object (W) provided with a plurality of pins (28) wherein the thickness of the dielectric member is 0.2-0.4mm (see col.1, lines 55) and the surface area of the pins in contact with the object is less than 4% of the total area of the dielectric member (as clearly illustrated from the figure 1 of Tamagawa) and the pins projects 0.02mm from the surface of the dielectric member (see col.5, lines 36), the pin is about 0.8mm in diameter (see col.5, line 36) and the pins (28) are 3mm apart (see col.5, line 38). Thus, Tamagawa discloses an electrostatic chuck used in a lithographic device and comprising substantially all of the basic features of the instant claims. Tamagawa specifically teaches that the electrostatic chuck attracts a wafer using Coulomb force and the Johnsen Rahbek effect (see col.7, lines 64-67) but Tamagawa does not expressly disclose a non-metallic conductive layer formed on the surface of the plurality of pins, the conductive layer is in contact with the object and has a specific resistivity less than $10\ \Omega\text{m}$. Logan et al (figure 1) teaches an electrostatic chuck for securing workpieces and having a top surface with a non-conductive layer having a specific resistivity less than $10\ \Omega\text{m}$ (see col.3, lines 10-15). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Tamagawa et al and Logan et al to obtain the invention as specified in claims 1-12 of the present application. It would have been obvious to a skilled artisan to utilize a non-metallic conductive layer having a specific resistivity less than $10\ \Omega\text{m}$, as suggested by Logan et al on the surface of plurality of pins in contact with the

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object of Tamagawa. The purpose of doing so would have been to maintain the electrostatic charge without significant eddy current losses and to reduce the Johnsen-Rahbek effect whereby the clamping force for holding the object is greatly improved.

Prior Art Made of Record

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kumar et al (U.S.Pat. 5,880,924) ; Nakajima (U.S. Pat. 6,452,775) and Xu et al (U.S.Pat. 5,841,624) discloses electrostatic chuck, each of which comprises substantially all elements as recited in the instant claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
8/24/04